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January 12, 1994

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

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By Hand

Mr. William F. Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, NW  
Washington, DC 20554

Re: Ex Parte Presentation  
CC Docket No. 92-297  
Local Multipoint Distribution Service

Dear Mr. Caton:

On behalf of Suite 12 Group ("Suite 12"), petitioner in the above-referenced rulemaking proceeding, enclosed please find two (2) copies of an "LMDs Summary Paper" which provides a brief overview of the public policy issues addressed by Suite 12 in its submissions in the LMDs rulemaking proceeding.

Please place two copies of this submission into the above-referenced docket. Any questions regarding this submission should be directed to the undersigned.

Sincerely,



Michael R. Gardner  
Charles R. Milkis  
William J. Gildea III  
Counsel for Suite 12 Group

Enclosures

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# **LMDS SUMMARY PAPER**

**By Suite 12 Group**

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## LMDS SUMMARY PAPER

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### **I. LMDS is an Immediate, High Quality, Low Cost, Competitive Alternative to Cable**

- **Higher quality than cable:** LMDS can immediately deliver to consumers studio quality FM-analog video with compact disc quality audio, superior in quality to the AM signal offered by coaxial cable. Suite 12's technology has sufficient quality for high resolution wide-screen television, and is able to provide a wide variety of interactive services. (See "The CellularVision Modulation Choice," submitted by Suite 12 in the LMDS rulemaking record on November 22, 1993; "Frequency Reuse in the Cellular LMDS," submitted by Suite 12 in the LMDS rulemaking record on January 6, 1994).
- **Lower start-up and maintenance costs than cable:** LMDS installation is less expensive and simpler than the costly fiber optic or coaxial cable infrastructures required by its wireline competitors; operation is consumer-friendly; and maintenance is inexpensive and simple, since there are no wires to trace or replace, and only three components to maintain: the transmitter, which is redundant, a subscriber's four or six-inch square receive antenna and a set-top tuner. Also, the low power level required for LMDS allows for operation during power failures. As a result, deployment costs the LMDS provider approximately \$300 per subscriber today — which is estimated to be approximately one-seventh the per subscriber price of deploying cable.
- **Greater consumer benefits than cable:** In comparison to cable, LMDS subscribers will receive a better quality product, with better service, and at a substantially lower monthly cost. It should be noted that among consumers, towns and civic groups, the demand for the pro-competitive LMDS is clear. (See "Broad-based Consumer and Press Support for Suite 12's LMDS Technology," letters and press articles submitted by Suite 12 in the LMDS rulemaking record on January 12, 1994). Further, LMDS can immediately reach areas which presently are not wired for cable; in the New York metropolitan area alone, this includes approximately 750,000 households, which often are located in lower income areas.
- **Greater program diversity and localism than cable:** Due to its cellular configuration, LMDS enjoys the added flexibility of providing locally-focused programming and services on a cell-by-cell basis, which allows it to address the particular needs and demographics of subscribers within a particular cell. (See "Telephony and Other Secondary Services Available through Suite 12's LMDS Frequency Plan," submitted by Suite 12 in the LMDS rulemaking record on January 11, 1994). Thus, while CellularVision of New York currently provides the predominantly Russian immigrant, cable-less population of Brighton Beach, Brooklyn with video services, including Russian-language

programming, an LMDS system in a nearby cell covering Wall Street could offer an array of data, voice and interactive teleconferencing services.

- **Immediate Universal Access to the Information Superhighway:** In addition to its important role as an alternative to cable, LMDS can also offer consumers an array of competitive interactive secondary services, including telephony and data services. The low-cost, low-infrastructure nature of deploying wireless LMDS can allow all consumers to gain immediate access to the Information Superhighway. (See "Telephony and Other Secondary Services Available through Suite 12's LMDS Frequency Plan"). Also, due to its broadband nature, LMDS can offer a number of beneficial informational services to consumers, including public service, educational, medical and business uses. (See "The Need for Wideband Services," submitted by Suite 12 in the LMDS rulemaking record on November 22, 1993). Importantly, LMDS can provide a much needed method for transmitting medical diagnostic and educational information directly to and from the home.

## **II. LMDS is Only Viable with 1 GHz licenses in the 28 GHz Band**

- **The need for 1 GHz licenses:** In order to be able to offer consumers a low cost, competitive alternative to cable, an LMDS operator, like fiber optic or coaxial cable systems, requires 1 GHz of bandwidth capacity in order to be able to offer a 50-channel video alternative; this is due to the fact (established in the rulemaking record) that each LMDS video channel requires 20 MHz bandwidth. (See "The CellularVision Modulation Choice"). With an allocation of anything less than a full 1 GHz, LMDS will be crippled in its infancy, like the Digital Electronic Message Service. LMDS can meet the need for a truly competitive alternative to cable, unlike Multichannel Multipoint Distribution Service, which suffers from inherent technical limitations.
- **The appropriate and efficient use of the 28 GHz band:** The largely unused 28 GHz band is the only appropriate spectrum available for the deployment of LMDS; other spectrum bands were considered and properly rejected. (See "LMDS is Not Viable in the 40.5-42.5 GHz Band," submitted by Suite 12 in the LMDS rulemaking record on December 16, 1993; Suite 12 Petition for Rulemaking, September 23, 1991). Any suggestion that LMDS may be deployed in the 40.5-42.5 GHz band is erroneous and totally unsupported in the record. Even the "Coalition to Preserve the Primary Status of the 27.5-29.5 GHz Band for Satellite Services," in its *ex parte* presentation on December 3, 1993, recognized that the 40 GHz band was not "economically feasible [for satellite services] . . . because of the aggravation of rain attenuation and other technical problems at the higher frequencies." If the 40 GHz is not suitable for high power satellite beam transmissions, it certainly

is even less suitable for the less powerful LMDS transmissions which would be greatly attenuated in the 40.5-42.5 GHz range. Moreover, it is significant that there has been no commercial deployment of LMDS-type services in the 40.5-42.5 GHz band anywhere in the world. (See "LMDS is Not Viable in the 40.5-42.5 GHz Band").

### **III. If Properly Allocated with Sufficient Spectrum in the 28 GHz Band, LMDS Can Provide Important Economic Benefits to the United States**

- **Creation of U.S. jobs from LMDS deployment:** The prompt and aggressive deployment of LMDS in the U.S. will create significant job opportunities for U.S. workers, both in the operation of LMDS systems and in the manufacture of LMDS equipment. U.S. equipment manufacturers under contract to Suite 12 and CellularVision of New York to produce equipment for LMDS include Alpha Industries, M/A-COM, Hughes Aircraft and Titan Industries. (See "LMDS is Not Viable in the 40.5-42.5 GHz Band"; "Telephony and Other Secondary Services Available through Suite 12's LMDS Frequency Plan").
- **The export of LMDS as a U.S.-driven technology:** Suite 12's U.S.-based CellularVision technology for LMDS represents an important potential export commodity for the U.S. in the global communications marketplace, particularly in developing countries like China, South Africa and vast portions of the NIS Republics, which lack modern communications infrastructures, and can use LMDS to immediately fill a range of video, telephony and data communications needs. (See "LMDS is Not Viable in the 40.5-42.5 GHz Band"; "Telephony and Other Secondary Services Available through Suite 12's LMDS Frequency Plan").
- **Adoption of a sound and spectrally efficient U.S. technological standard in the global arena:** Since there has been no commercial deployment of LMDS-type services globally, the U.S. has the opportunity to set the appropriate technical standard in the 28 GHz band that will govern the deployment of LMDS-type services throughout the world. (See "LMDS is Not Viable in the 40.5-42.5 GHz Band"; "Telephony and Other Secondary Services Available through Suite 12's LMDS Frequency Plan"). This technical standard must include such techniques as frequency interleaving and polarization isolation, which protect against co-channel interference and allow adjacent cell frequency reuse. (See "Frequency Reuse in the Cellular LMDS"). Like the leadership provided by the U.S. in rejecting the flawed EC HDTV standard, the U.S. should exercise spectrum efficiency leadership by appropriately deploying LMDS in the 28 GHz band.
- **Increased federal revenues from licensing LMDS now:** The prompt auctioning

of LMDS licenses on a nationwide basis with sufficient spectrum in the 28 GHz band has the potential to generate substantial revenues for the U.S. treasury, serving an important Congressional goal. (See Letter from Brian D. Oliver, President, Business Development, Bell Atlantic Enterprises International, to Chairman Hundt and Commissioners, submitted in the LMDS rulemaking record on December 20, 1993); "Telephony and Other Secondary Services Available through Suite 12's LMDS Frequency Plan"). By contrast, hoarding the under-utilized 28 GHz spectrum for possible use five or ten years into the future by a limited number of satellite operators will generate minimal revenue, at best.

#### **IV. The Public Interest will be Disserved if the Commission Allows Spectrum Hoarders to Derail LMDS**

- LMDS has the ability to coexist with FSS in the 28 GHz band:** LMDS will not interfere with current and prospective Fixed Satellite Services in the 28 GHz band, notwithstanding the severely flawed calculations of NASA, Motorola, etc. (See "LMDS Does Not Interfere with NASA ACTS," submitted in the LMDS rulemaking record on November 24, 1993; and "Supplemental Rebuttal," submitted in the LMDS rulemaking record on January 6, 1994; "LMDS Cannot Interfere with Motorola Iridium (LEO)," submitted in the LMDS rulemaking record on January 5, 1994). Further, the potential interference from FSS earth station uplinks to LMDS subscriber receivers in the future is virtually non-existent and inconsequential, and with the use of certain techniques noted by Suite 12 can be reduced to zero. (See "Satellite Earth Stations Operating in the 28 GHz Band will not Interfere with LMDS Receivers," submitted by Suite 12 in the LMDS rulemaking record on January 11, 1994).
- FSS are already enormous U.S. spectrum beneficiaries, and existing C-band and Ku-band spectrum is sufficient to satisfy foreseeable demand:** FSS interests, including Hughes, currently have substantial spectrum available, outside the 28 GHz band, in which to operate their services. For example, in the C-band and Ku-band, the total amount of orbital arc capacity assigned to U.S. domestic satellites is approximately 33,000 MHz. (See "Satellite Usage at 28 GHz," statement of Dr. Jeffrey Krauss, submitted by Suite 12 in the LMDS rulemaking record on January 10, 1994). Moreover, 11.7% of the C-band and 23.2% of the Ku-band capacity is not in revenue service, and 19.4% of the C-band and 26.7% of the Ku-band is used only occasionally, representing 10.773 GHz of available capacity (and the recent launch of Telstar 401 adds about 2 GHz of new capacity). (See "Satellite Usage at 28 GHz," statement of Walter L. Morgan, submitted by Suite 12 in the LMDS rulemaking record on January 10, 1994). Thus, the continued reservation of

the 28 GHz band for potential and speculative FSS use sometime in the future is not only unnecessary, it would be directly against the public interest since this hoarding would doom the innovative, competitive, pro-consumer LMDS.

- **Hughes unrealistic appetite for spectrum should be balanced with prudent co-existence in the 28 GHz band:** Hughes' business plan for its recently announced "Spaceway" project is highly optimistic — in fact, some call it "Lost in Spaceway," since its projections rely on an unproven business plan which is based on best-case marketing scenarios five years away. Current VSATs in operation in the Ku-band have a transponder capacity of 1,688 MHz; Hughes' Spaceway project proposes to add approximately 11,500 MHz of new VSAT capacity. (See "Satellite Usage at 28 GHz," statement of Walter L. Morgan). In balancing the immediate benefits to U.S. consumers and the U.S. economy from a prompt allocation of LMDS in the 28 GHz band, against the FSS claims for sole dominion over the 28 GHz band, the Commission should consider whether Hughes and other FSS interests can utilize spectrum already provided to them, let alone efficiently utilize additional capacity being requested for a proposed service that will not be launched for five years, at the earliest.

## V. Conclusion

- Suite 12's revolutionary technology for LMDS is a proven high quality, low cost alternative to cable, and also provides telephony and data alternatives that ensure U.S. consumers of all social and economic levels universal access to the Information Superhighway.
- If LMDS is licensed prudently and promptly by the Commission with two 1 GHz licenses in the grossly under-utilized 28 GHz band, the U.S. will establish the appropriate global standard to export this dynamic technology — creating U.S. jobs, particularly in the beleaguered defense industry, and enormous potential federal revenues from auctions of the largely vacant 28 GHz band.
- Because LMDS and FSS can co-exist as co-primary licensees in the 28 GHz band, LMDS can be deployed throughout the U.S. with two 1 GHz licenses per service area without any interference with or disruption to current and proposed FSS systems, which already enjoy substantial amounts of spectrum which are unused and available for FSS use in the C-band and the Ku-band.